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10/085,548

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Takahiro Unno

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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* TAKAHIRO UNNO

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Appeal 2007-3248  
Application 10/085,548  
Technology Center 2600

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Decided:<sup>1</sup> February 24, 2009

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Before ROBERT E. NAPPI, JOHN A. JEFFERY, and CARLA M.  
KRIVAK, *Administrative Patent Judges*.

NAPPI, *Administrative Patent Judge*.

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<sup>1</sup> The two-month time period for filing an appeal or commencing a civil action, as recited in 37 CFR § 1.304, begins to run from the decided date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

## DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 6(b) of the final rejection of claims 1, 2, and 5. Claims 3, 4, and 6 have been allowed.

We reverse the Examiner's rejections of these claims.

## INVENTION

The invention is directed towards a method of speech coding and decoding/synthesis where frames have been erased or lost. See pages 1 through 4 of Appellant's Specification. Claim 1 is representative of the invention and reproduced below:

1. A method for decoding code-excited linear prediction signals, comprising:
  - (a) forming an excitation for an erased interval of encoded code-excited linear prediction signals by a weighted sum of (i) an adaptive codebook contribution and (ii) a fixed codebook contribution, wherein said adaptive codebook contribution derives from an excitation and pitch and first gain of one or more intervals prior to said erased interval and said fixed codebook contribution derives from a second gain of at least one of said prior intervals;
  - (b) wherein said weighted sum has sets of weights depending upon a periodicity classification of at least one prior interval of encoded signals, said periodicity classification with at least three classes; and
  - (c) filtering said excitation.

## REFERENCES

Shoham	US 5,699,485	Dec. 16, 1997
Unno	US 6,826,527 B1	Nov. 30, 2004

Amir Husain & Vladimir Cuperman, *Classification and Spectral Extrapolation Based Packet Reconstruction for Low-Delay Speech Coding*, Proceedings of the Global Telecommunications Conference. Vol. 2, 28, Nov. 1994, pp. 848-52 (“Husain”).

## REJECTIONS AT ISSUE

The Examiner has rejected claims 1, 2, and 5 under 35 U.S.C. § 103(a) as being unpatenable over Shoham and Husain. The Examiner’s rejection is on pages 4 through 6 of the Answer.<sup>2</sup>

The Examiner has rejected claim 1 under the judicially created doctrine of obviousness type double patenting as being unpatenable over claim 1 of Unno. The Examiner’s rejection is on page 3 of the Answer.

## ISSUES

Appellant argues on page 3 of the Brief,<sup>3</sup> that the Examiner’s rejection of claims 1, 2, and 5 under 35 U.S.C. § 103(a) is in error. Appellant argues that Husain requires knowledge of the periodicity classification of an erased frame. As such, Appellant argues that Husain is not compatible with Shoham or the claimed invention, both of which discuss deducing the classification of erased frames from prior frames.<sup>4</sup>

Thus, Appellant’s contentions present us with the issue: did the Examiner err in finding that the combination of Shoham and Husain teaches decoding a signal where for an erased frame, an excitation is formed and

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<sup>2</sup> Throughout the opinion we refer to the Answer mailed June 14, 2006.

<sup>3</sup> Throughout the opinion, we refer to the Brief, received April. 6, 2006.

<sup>4</sup> We note Appellant presents additional arguments not addressed here. However, as the issues raised by this argument are dispositive of the case, we only address this argument.

filtered using a weighted sum, the values of the weights depend upon a periodicity classification as claimed?

Appellant argues on page 4 of the Brief that the Examiner's rejection of claim 1 under the judicially created doctrine of obviousness type double patenting is in error. Appellant argues that dropping the periodicity classification of application limitation of claim 1, as asserted by the Examiner, is not obvious.

Thus, Appellant's contentions directed to obviousness type double patenting present us with the issue: did the Examiner err in finding that substituting the periodicity classification limitation of claim 1 for the muting limitation in claim 1 of Unno obvious?

#### FINDINGS OF FACT

1. Shoham teaches a system for use in speech decoders which experience frame erasure. Abstract.
2. Shoham teaches that during frame erasure, the decoder must obtain an excitation signal for use in synthesizing a speech signal. The synthesized signal is classified as voiced (periodic) or unvoiced (aperiodic). The erased frame is assigned the same periodicity as the previous frame. Col. 5, l. 61- col. 6, l. 14, col. 33, ll. 43-46.
3. Shoham teaches that if the erased frame is classified periodic only an adaptive codebook is used and the fixed codebook contribution is zero. If the erased frame is classified non periodic the adaptive codebook's contribution is set to zero and the fixed codebook contribution is used. Col. 33, l. 45 - col. 34, l. 3.

4. Husain teaches a method for spectral extrapolation in speech decoders. The method extrapolates missing frames based upon speech classification (voiced, unvoiced, transition, and silence). Abstract, p. 848; *see also* page 849 (paragraph following Figure 2).
5. Husain teaches that the receiver knows the classification of a frame even if the frame is lost (i.e., the decoder which is performing the spectral extrapolation of a lost frame knows the classification of the frame). This is accomplished by transmitting the classification of the current frame in the prior frame or transmitting the frame classification using error correction code. Page 849 (paragraph following Figure 2).

#### PRINCIPLES OF LAW

In determining whether a double patenting rejection is proper, the first question to be asked is, are the claims directed to the same invention? If the claims are directed to the same invention, 35 U.S.C. § 101 forbids the grant of the second patent. If the claims are not directed to the same invention, the second analysis question that must be asked is, “[d]oes any claim in the application define merely an obvious variation of an invention disclosed and claimed in the patent? In considering the question, the patent disclosure may not be used as prior art.” *In re Vogel*, 422 F.2d 438, 441 (CCPA 1970) (citing *In re Boylan* 392 F.2d 1017 (CCPA 1968); *In re Aldrich*, 398 F.2d 855 (CCPA 1968)).

## ANALYSIS

Appellant's contentions have persuaded us that the Examiner's rejection of independent claims 1 and 5 under 35 U.S.C. § 103(a) is in error. Claim 1 recites forming an excitation for a missing frame using a weighted sum of contributions from an adaptive codebook and fixed codebook. Claim 1 further recites "wherein said weighted sum has sets of weights depending upon a periodicity classification of at least one prior interval of encoded signals, said periodicity classification with at least three classes." Thus, the scope of claim 1 includes that the classification of the excitation is determined by the classification of periodicity for prior frame intervals. Further, claim 1 recites that there are at least three periodicity classifications. Independent claim 5 recites limitations directed to similar features.

The Examiner has found that Shoham teaches generating excitations using the claimed method of weighting contributions from codebooks based upon classification of past frames, but only recites two classifications. Answer 4-5. We find that the evidence supports this finding by the Examiner. Facts 1-3. The Examiner further finds that Husain teaches a speech decoder which makes use of four classifications and that it would be obvious to apply the four classifications to Shoham. While we concur with the Examiner's finding that Shoham teaches four classifications (Fact 4) we do not concur with the Examiner that combining this teaching with Shoham renders the claimed invention obvious. As discussed above, the independent claims recite that the sets of weights are dependent upon a classification in a prior interval. Shoham teaches this for the two classifications discussed but provides no insight how there can be three classifications determined based upon past frames. Further, while Husain teaches four classifications, Husain

does not teach or suggest that these classifications are determined from past intervals; rather Husain teaches that they are known. Fact 5. As such, we do not find that the prior art teaches or suggests all of the limitations of independent claims 1 and 5. Thus, Appellant has persuaded us that the Examiner erred in finding that the combination of Shoham and Husain teaches decoding a signal where for an erased frame an excitation is formed and filtered using a weighted sum, the values of the weights depend upon a periodicity classification as claimed. Accordingly, we will not sustain the Examiner's rejection of claims 1, 2, and 5 under 35 U.S.C. § 103(a).

Appellant's contentions have also persuaded us that the Examiner's rejection of independent claim 1 under the judicially created doctrine of obviousness type double patenting is in error. The Examiner has found that claim 1 of the instant application and claim 1 of Unno are identical with the exception of limitation (b). In claim 1 of the application under appeal, limitation (b) recites a weighted sum, and in claim 1 of the patent to Unno limitation (b) recites "muting an excitation." Answer 3, 9. Further, in response to Appellant's arguments, the Examiner states:

. . .[T]he examiner argues that the step of muting the excitation as found in claim 1, of USP 6,826,527 could be substituted for step (b) of the present application because, before the muting step is carried out, the periodicity classification of the frame has to be found (USP 6,827,527 [sic], col. 2, lines 46-63). Based on the frame characteristics (including the classification), the excitation- muting factor is updated (USP 6,827,527 [sic], col. 7, lines 13- 22), where the muting factor is used to mute the sum of an adaptive codebook contribution and a fixed codebook contribution (USP 6,827,527 [sic], col. 8, lines 37-41). Therefore, by merely substituting the muting step of claim one of USP 6,827,527 [sic], for step (b) of the present application the claims would become identical.



Appeal 2007-3248  
Application 10/085,548

Answer, 9-10. Thus, the Examiner's rationale for the rejection relies upon the disclosure and the claims of Unno (USP 6,826,527) as prior art. This rationale is insufficient to show obviousness because in determining obviousness-type double patenting, the Examiner can not rely upon disclosure of the patent as prior art. *See Vogel*, 422 F.2d at 441.

Accordingly, we do not find that the Examiner has shown that claim 1 of the application under appeal is obvious over claim 1 of Unno. Thus, we will not sustain the Examiner's rejection of claim 1 under the judicially created doctrine of obviousness-type double patenting.

ORDER

The decision of the Examiner is reversed.

REVERSED

ELD

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